

REMARKS

As a preliminary matter, the abstract and specification are objected to for the reasons set forth on page 2 of the present Office Action. Applicants amend the abstract and specification, as indicated herein, and Applicants believe that these amendments obviate the Examiner's objections to the abstract and specification.

Claims 2-4 are also objected to for the reasons set forth in the paragraph bridging pages 3-4 of the present Office Action. Applicants amend claims 2-4, as indicated herein, and Applicants believe that these amendments obviate the Examiner's objections to claims 2-4.

Claims 1-8 are all the claims pending in the present application. Applicants thank the Examiner for indicating that claims 4 and 5 contain allowable subject matter, and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 1-3 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Adams (U.S. Patent No. 6,016,374) in view of Epworth (U.S. Patent No. 5,513,030). Claim 6 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Adams in view of Epworth, further in view of Doerr (U.S. Patent No. 5,809,184). Finally, claim 7 and 8 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Adams in view of Epworth, and further in view of Ishikawa (US Patent No. 5,612,807).

§103(a) Rejections (Adams/Epworth) - Claims 1-3

A brief description of the applied references is as follows:

Adams is directed to a transmitter with an incorporated equalizer. The intention of this device is to pre-shape transmission signals according to the measured distortion of the transmission

line. The transmitter does not work with a wavelength grid signal. The source is a pulsed laser source (single wavelength). Adams demultiplexes this pulsed signal to obtain different spectral components of sharp signals travelling along the fibre with different chromatic dispersion. The pulsed signal is then shaped according to the distortion of the line by adapting the phase (not a delay). After multiplexing the spectral lines again, the data signal is applied via a modulator on the single wavelength pulsed signal.

Epworth discloses using a low frequency diode to detect a signal in a single wavelength transmission. There is no hint herein to combine the photodetection with the resynchronization described in the invention. Epworth does not deal with a WDM system. In Epworth, it is disclosed that a soliton signal is recovered after transmission. The soliton signal is a mono wavelength signal which shifts versus the clock frequency. Fig. 2 shows that the signal must be retimed and reshaped. The use of the photodiode 31 is to monitor a single wavelength and the power of the signal in this wavelength. Epworth does not show, for example, the features: WDM time delay between WDM channels, the modulation with clock signal is only applied on one channel.

With respect to independent claim 1, the Examiner alleges that Adams satisfies most of the features of claim 1, except the Examiner acknowledges that, "Adams does not disclose a modulator with a clock signal of high frequency or a low frequency photodetector." The Examiner, however, believes that Epworth makes up for the deficiencies of Adams. In response, Applicants submit that neither Adams nor Epworth, either alone or in combination, discloses or suggests the specific operations set forth in claim 1. For example, neither of the applied

references disclose or suggest at least, "Demultiplexing the signals, delaying the signals individually between channels and multiplexing the signals again for the next step, First remodulating the multiplexed signal with a clock signal of high frequency, monitoring the remodulated signal with at least one low frequency photodetector unit, and measuring, analyzing the photocurrent of the photodetector, adjusting via an electronic circuit the time delays between the channels." That is, the descriptions of the applied references above demonstrate that the specific limitations set forth in claim 1 are not satisfied.

Further, Applicants submit that one skilled in the art would not have been led to combine Epworth with Adams to arrive at the present invention. That is, one of ordinary skill in the art, in view of Adams, would only see that it is possible to pre-shape transmission signals. There is no content telling a person to use the invention to synchronize WDM channels with different wavelengths in one single step. In view of Adams, one of ordinary skill in the art would look for a WDM disclosure and not for a soliton (Epworth) transmission which is again related to a single wavelength.

Therefore, at least based on the foregoing, Applicants submit that independent claim 1 is patentably distinguishable over the applied references, either alone or in combination. Claim 3 is patentable at least based on reasons set forth above with respect to independent claim 1.

With respect to independent claim 2, Applicants submit that neither Adams nor Epworth, either alone or in combination, discloses or suggests at least "remodulating the multiplexed signal in a first modulator with a clock signal of high frequency" and "monitoring a part of the remodulated signal in a second modulator with at least one low frequency

photodetector unit," as recited in independent claim 2. That is, Adams does show two modulators 108 and 107, however neither one of these modulators perform the operation of monitoring a part of the signal in a second modulator with at least one low frequency photodetector unit. That is, claim 2 describes modulation at two instances after multiplexing the signals. However, Adams only shows that modulation occurs at modulator 107 after multiplexing occurs at the multiplexer 112. Therefore, Adams does not disclose or suggest the second modulator as recited in claim 1. At least based on the foregoing, Applicants submit that independent claim 2 is patentably distinguishable over Adams and Epworth.

§103(a) Rejections (Adams/Epworth/Doerr) - Claim 6

Applicants submit that claim 6 is patentable by virtue of its dependency from claim 3, as long as Doerr does not make up for the deficiencies of Adams and Epworth.

§103(a) Rejections (Adams/Epworth/Ishikawa) - Claims 7 and 8

Applicants submit that claim 6 is patentable by virtue of its dependency from claim 3, as long as Ishikawa does not make up for the deficiencies of Adams and Epworth.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U. S. Application No. 10/028,919

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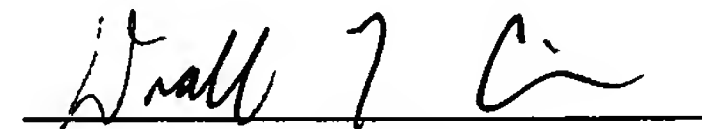
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